UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,093	11/21/2001	Jeffrey Binder	1303.65625	1287

7590   02/10/2006

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EXAMINER
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ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 November 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>21 November 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>3/25/02, 1/17/06</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-4, 6-8, and 10-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Yokote et al. "Yokote" (U.S. 6,067,108) in view of Rege (U.S.

6,128,467).

Regarding Claim 1, Yokote discloses a method for generating multiple parallel

streams of data from a large solid-state mass storage device (Abstract). Yokote

teaches, "a large scale memory device" by disclosing memory array 40 (Col. 3, line 48 –

Col. 4, line 30). Yokote teaches, "means for storing said data in said large scale

memory device" by disclosing memory array 40 receives input data through input ports

56 where the input data is provided from magnetic tape 18 or disk 20 (Col. 4, lines 12-

30). Yokote teaches, "means for retrieving at least a portion of said data from said large

scale memory device and generating multiple asynchronous streams of data" by

disclosing output board 58 retrieves the video data from expansion board 50 and output

board 58 transmits the video data through network 10 to terminal 12 (Col. 3, line 60 –

Col. 4, line 35). Yokote teaches retrieving means includes, "means for generating

protocols necessary for the transport of each unique stream across at least one network

and for decoding said unique streams of data" by disclosing logic modules 42, packet

memories 44, and ATM/SONET interface modules 46, which perform the function of

formatting the data into packets in accordance to a widely used standard (Col. 3, line

48, - Col. 5, line 25). Yokote discloses server 14 or "stream server processor", and VME

bus 30 or "interconnect". However, Yokote fails to explicitly disclose retrieving means

including at least two stream server processors operatively connected to said large

scale memory device and an interconnect allowing near simultaneous access to said

data stored in said large scale memory device by said at least two stream server

processors; including a hardware based arbitrator operatively connected to at least two

stream server processors for controlling access to said large scale memory device so

that multiple unique streams of data may be generated by one or more of said at least

two stream server processors from said large scale memory device. In a related art

pertaining to video distribution, Rege teaches, "at least two stream server processors

operatively connected to said large scale memory device" by disclosing servers 300 or

"stream server processors" (Col. 3, lines 18-63). Rege teaches, "an interconnect

allowing near simultaneous access to said data stored in said large scale memory

device by said at least two stream server processors" by disclosing switch 400 or

"interconnect" (Col. 3, line 18 – Col. 4, line 30). Rege teaches the switch or

"interconnect" includes, "a hardware based arbitrator operatively connected to said at

least two stream server processors for controlling access to said large scale memory

device so that said multiple unique streams of data may be generated by one or more of

said at least two stream server processors from said large scale memory device" by

disclosing arbiter 600 or "arbitrator" which is used to set the appropriate switching

elements to allow content to be transferred from disks 800 to servers 300 via switch 400

(Col. 3, line 18 – Col. 4, line 67). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify Yokote with the

teachings of Rege in order to facilitate retrieving means including at least two stream

servers, an interconnect that includes an arbitrator for the benefit of providing a

multimedia delivery system which can dynamically balance the load over all the

resources of the system (Background – Rege).

As for Claim 2, Yokote teaches, "wherein the data stored and retrieved from said

large scale memory device includes audio with a predetermined relationship to said

video" by disclosing a solid state mass storage device capable of providing a large

number of parallel data output streams on demand for multiple users (Col. 3, lines 12-

27). Yokote further teaches video stored on memory array 40 is retrieved from tape 18

or disk 20 (Col. 4, lines 12-35). Yokote further discloses ATM stream generator can

generate as many as 2,000 user-controllable data streams simultaneously (Col. 6, lines

1-12). Yokote discloses memory array is typically used for an on-demand video system,

which typically includes video streams that comprise corresponding audio (Col. 3, lines

12-27).

As for Claim 3, Yokote teaches, "wherein said large scale memory device is

comprised of random access memory" by disclosing data can be read and written to

memory array 40 (Col. 4, lines 12-35). Therefore, memory array 40 reads on a large-scale memory device that is comprised of random access memory.

As for Claim 4, Yokote discloses in figure 3, expansion boards can store up to 6 GB of video data (Col. 4, lines 1-11). However, Yokote fails to explicitly disclose memory array 40 having a storage capacity of at least 65 gigabytes. The examiner gives Official Notice that it is notoriously well known in the art of video distribution for large-scale memory device to comprise various storage capacities whether storage is 6 GB, 25 GB, 65 GB, or even 100+ GB. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote in order for a large scale memory device to have a storage capacity of at least 65 gigabytes for the benefit of having a large scale memory device that has various storage capabilities in order to meet the required load of the video on demand system.

As for Claim 6, Yokote teaches, "wherein said audio and/or video data includes multiple unique programs" by disclosing a solid state mass storage device capable of providing a large number of parallel data output streams on demand for multiple users (Col. 3, lines 12-27). Since Yokote discloses a memory array for a video-on-demand system, the memory array therefore must store multiple unique programs.

As for Claim 7, Yokote teaches, "wherein said multiple streams of asynchronous streams of data are simultaneously generated from said multiple unique programs" by disclosing ATM stream generator 16 can generate as many as 2,000 user-controllable data streams or "unique programs" simultaneously (Col. 6, lines 1-12).

As for Claim 8, Yokote teaches, "means for allowing said stream(s) to be generated upon a first block of an audio/video program being stored in said large scale memory, without having to wait for entire said program to be written to said large scale memory" by disclosing the video packets are sent to users continuously ensuring a constant data rate (Col. 5, lines 3-25).

As for Claim 10, Yokote fails to explicitly disclose solid-state memory array 40 comprises dual inline memory modules. The examiner gives Official Notice that it is notoriously well known in the art of video distribution to use dual inline memory modules as a form of memory to store multimedia content. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote in order for a large-scale memory device to be comprised of dual inline memory modules for the benefit of allowing more memory to be added to the system one chip at a time.

As for Claim 11, Yokote fails to explicitly disclose solid-state memory array 40 comprises DRAM. The examiner gives Official Notice that it is notoriously well known in the art of video distribution to use DRAM as a form of memory to store multimedia content. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote in order for a large-scale memory device to be comprised of dual inline memory modules for the benefit of storing up to four times more data compared to RAM.

As for Claim 12, Yokote fails to explicitly disclose solid-state memory array 40 comprises magnetic RAM. The examiner gives Official Notice that it is notoriously well known in the art of video distribution to use magnetic RAM as a form of memory to store multimedia content. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote in order for a large scale memory device to be comprised of magnetic RAM for the benefit of MRAM chips can hold their content even when the chip loses power.

As for Claim 13, Yokote fails to explicitly disclose solid-state memory array 40 comprises dual data rate DRAM. The examiner gives Official Notice that it is notoriously well known in the art of video distribution to use dual data rate DRAM as a form of memory to store multimedia content. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote in order for a large scale memory device to be comprised of dual data rate DRAM for the benefit of using DDRDRAM to effectively double the clock frequency which in turn increases the data transfer rate of multimedia content.

As for Claim 14, Yokote fails to explicitly disclose solid-state memory array 40 comprises static RAM. The examiner gives Official Notice that it is notoriously well known in the art of video distribution to use static RAM as a form of memory to store multimedia content. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote in order for a large scale memory device to be comprised of static RAM for the benefit of SRAM holds data as long as there is enough power and provides data at faster rates compared to DRAM

As for Claim 15, Yokote fails to explicitly disclose solid-state memory array 40 comprises synchronous DRAM. The examiner gives Official Notice that it is notoriously well known in the art of video distribution to use synchronous DRAM as a form of memory to store multimedia content. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote in order for a large scale memory device to be comprised of synchronous DRAM for the benefit of SDRAM operates at higher clock speed compared to DRAM and therefore can deliver data at faster rates.

As for Claim 16, Yokote teaches, "wherein the protocol associated with said streams of data is generated in hardware" by disclosing ATM/SONET modules 46 (Col. 3, line 48 – Col. 4, line 35).

As for Claim 17, Yokote fails to explicitly disclose stream server processors are interconnected and shared across a backplane. In a related art pertaining to video distribution, Rege discloses in figure 2, servers 300 are interconnected across LAN 210 or "backplane" (Col. 3, lines 18-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokote with the teachings of Rege in order for stream server processors to be interconnected and shared across a backplane for the benefit of providing a multimedia delivery system which can dynamically balance the load over all the resources of the system (Background – Rege).

As for Claim 18, Yokote teaches, "means for responding to VCR type controls, said controls being handled by a separate CPU running software" by disclosing memory array addressing logic 38 (Col. 4, line 47 – Col. 5, line 35).

3.   Claims 19-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokote.

Regarding Claim 19, Yokote discloses a method for generating multiple parallel streams of data from a large solid-state mass storage device (Abstract). Yokote teaches, "generating one or more video and/or audio program streams" by disclosing ATM stream generator can generate as many as 2,000 user-controllable data streams simultaneously (Col. 6, lines 1-12). Yokote teaches, "transferring said program stream(s) to a large scale memory device" by disclosing memory array 40 receives input data through input ports 56 where the input data is provided from magnetic tape 18 or disk 20 (Col. 4, lines 12-30). Yokote teaches, "storing at least a portion of said program stream(s) in said memory device" by disclosing memory array 40 stores the received video data from magnetic tape 18 or disk 20 (Col. 4, lines 12-30). Yokote teaches, "establishing sessions in response to a request from one or more customer terminals to generate one or more program stream(s) said request being handled by a CPU that uses a first bus separate from a second over which program streams are transferred to said customer terminal" by disclosing client terminals 12 send requests for content to server 14 or "CPU" via WAN network 10. Server 14 or "CPU" processes the requests and forwards the request to stream generator 16. Stream generator 16 outputs the

requested video to client terminal 12 via output board 58 (Col. 3, line 12 – Col. 4, line

35). Yokote teaches, "using a separate hardware based processor for retrieving and

generating one or more program streams for said customer terminal from one or more

program streams stored in said large scale memory" by disclosing memory array

addressing logic 38, which controls the generation of addresses for a large memory

array 40 and the output of video data to terminals 12 (Col. 3, line 47 – Col. 4, line 35).

Yokote fails to explicitly disclose a first bus in which requests are received. However, it

is well know in the art to use buses to interconnect components to facilitate transferring

data between components at high speeds. Therefore, it would have been obvious to

one of ordinary skill in the art at the time the invention was made to modify Yokote in

order for the CPU to receive requests via a first bus for the benefit of facilitating data

requests between components of a VOD system in order to increase data transfer rates.

As for Claim 20, Yokote teaches, "wherein said large scale memory device is

comprised of random access memory" by disclosing data can be read and written to

memory array 40 (Col. 4, lines 12-35). Therefore, memory array 40 reads on a large-

scale memory device that is comprised of random access memory.

As for Claim 22, Yokote teaches, "generating a protocol stack associated with

each of said data streams in said hardware based processor" by disclosing data

retrieved from the memory array 40 are formatted into ATM data cells for direct output

without passing through a processor (Col. 3, line 28 – Col. 4, line 35).

4.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokote in

view of Rege as applied to claim 3 above, and further in view of Thompson (U.S.

5,881,245).

As for Claim 5, the combination of Yokote and Rege fail to explicitly disclose

wherein said large-scale memory device has an address bus greater than 36 bits. In a

related art pertaining to video distribution, Thompson discloses MPEG stream server

502 or "large scale memory device" includes a system bus having adequate throughput

(e.g., 267 Mbytes to 1.2 Gbytes bandwidth) (Col. 9, line 51 – Col. 10, line 3). Therefore,

it would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the combination of Yokote and Rege with the teachings of

Thompson in order for a large scale memory device to have an address bus greater

than 36 bits for the benefit of facilitating quick data transfers between a large scale

memory device and stream servers.

5.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokote in

view of Rege as applied to claim 3 above, and further in view of Youden et al. "Youden"

(U.S. 5,815,146).

As for Claim 9, the combination of Yokote and Rege fail to disclose including a

module CPU for each of said at least two stream server processors, each of said

module CPUs using a first bus that is separate from a second bus from which said data

streams are retrieved. In a related art pertaining to video distribution, Youden discloses

in figure 2, real time controller 60 or "CPU" comprises a first bus that connects with a

plurality of data sources 100 and a second bus is connected to switch 70 (Col. 5, line 27

– Col. 6, line 55). Therefore, it would have been obvious to one of ordinary skill in the art

at the time the invention was made to modify Yokote and Rege with the teachings of

Youden in order to include a module CPU for each of said at least two stream server

processors, each of said module CPUs using a first bus that is separate from a second

bus from which said data streams are retrieved for the benefit of generating and

controlling thousands of video output streams at a relatively low-cost (Background –

Youden).

6.   Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokote

in view of Youden et al. "Youden" (U.S. 5,815,146).

As for Claim 21, Yokote fails to explicitly disclose generating multiple program

streams using multiple hardware based processors that simultaneously access said

large-scale memory device. In a related art pertaining to video distribution, Youden

discloses data sources 100 or "multiple hardware based processors" access data

storage subsystem 90 or "large scale memory device" via switch 70 simultaneously

(Col. 6, line 58 – Col. 8, line 41). Youden further discloses RAM may replace disk drives

97 in data storage subsystem 90 (Col. 8, lines 62-65). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify

Yokote with the teachings of Youden in order to facilitate generating multiple program

streams using multiple hardware based processors that simultaneously access said

large scale memory device for the benefit of generating and controlling thousands of

video output streams at a relatively low-cost (Background – Youden).

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

   U.S. Pat. No. 5,675,738 to Suzuki et al. – A video information server system

   which makes it possible for a party to remotely control any of a plurality of video

   information server apparatuses holding a plurality of types of video information

   different in type from each other through a communication network.

   U.S. Pat. No. 5,651,129 to Yokote et al. – A modular solid-state mass data

   storage device providing high capacity storage of numerous full-length movies for

   video server applications.

   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chris Parry whose telephone number is (571) 272-8328.

The examiner can normally be reached on Monday through Friday, 8:30 AM to 4:30 PM.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Examiners Initials: _CLP_
February 1, 2006

JOHN MILLER
SUPERVISORY PATENT EXAMINER
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